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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,740	11/20/2003	Maynard Martin	MICR133.04	1789

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/718,740

Applicant(s)

MARTIN, MAYNARD

Examiner

Sylvia R MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 15-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11/20/03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1763

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 15-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,086,778. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent teaches an etch injector having a muffle adapted to receive a gas injector assembly comprising an etch chamber (housing, container, shell) open at one end with an inlet wherein a liquid etchant can be introduced and a seal disposed about an open end of the etch chamber. The etch chamber is claimed to replace a gas injector assembly in the muffle. An outlet is also provided where chemical vapors can be removed.

In contrast the invention fails to claim that the housing, shell, or container is an etch chamber, just that it is part of a semiconductor fabrication device.

The patent also teaches a window in the etch chamber where at least a portion of the muffle can be observed.

In contrast the invention fails to claim that the liquid is specifically an etchant instead it is claimed as a cleaning agent.

The patent claims are narrower than the present invention and thus deems the present invention as obvious at the time of the claimed invention.

3. Claims 15-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 5,688,359. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims a modular muffle etch injector assembly comprising an etch chamber with a closed top end and open bottom end, a supply means where liquid etchant is introduced through an inlet port, and a sealing means is disposed along the bottom of the etch chamber. The patent further claims an exhaust means consisting of an exhaust port, a viewing means for viewing the lower surface of the muffle comprising a sight glass.

In contrast the invention fails to teach that the liquid is specifically an etchant or that the housing, shell, or container is an etch chamber.

Additionally, the present invention fails to claim that the viewing means is a window. The patent claims are narrower than the present invention and thus deems the present invention as obvious at the time of the claimed invention.

4. Claims 15-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,673,156. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims a modular muffle etch injector assembly comprising an etch chamber with a closed top end and open bottom end, a supply means where liquid is introduced through an inlet

port, and a sealing means is disposed along the bottom of the etch chamber. The patent further claims an exhaust means consisting of an exhaust port, a viewing means for viewing the lower surface of the muffle comprising a sight glass.

In contrast the invention fails to teach that the liquid is specifically an etchant or that the housing, shell, or container is a chamber.

The patent claims are narrower than the present invention and thus deems the present invention as obvious at the time of the claimed invention.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 16, 21-23, and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Ketchum (US 5,413,671).

Ketchum teaches an apparatus and method for removing deposits from an APCVD system 10. As wafers 16 enter chamber 23, thin film materials or dopant materials are directed upon wafer 16 via injector 18. To clean the APCVD hydrogen fluoride (known etchant) is diffused through a diffusing screen 40. Each inlet flow tube 45 receives vaporized etchant and delivers the etchant to all three injector inlet tubes 54. Figures 1-4 illustrate a housing/container/shell or chamber as is the nomenclature of the present invention. A seal is coupled to the housing and located around the open end

(located around element 40). Another open end is Bond teach the use of etchant spray nozzles 82 mounted on a plenum chamber as discussed in col. 3 lines 20-43.

The motivation to modify the apparatus of Ketchum is to provide for the use of liquid as the type of etchant rather than gas. The entire muffle area 42 is illustrated in Fig. 3.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ketchum in view of Bond et al (US 4,124,437).

The teachings of Ketchum were discussed above.

Regarding claims 17 Ketchum fails to teach a viewing window.

Bond teaches viewing window 90.

The motivation to provide this window as taught by Bond is to allow an operator to visually inspect the web 8 and film 9 as they pass through etching station 12.

Regarding claims 18-20 Ketchum fails to teach a closed end.

Bond teaches the entire system under a cover as illustrated in Fig. 1a. The motivation to provide for a closed end in the apparatus of Ketchum is to limit the risk of contamination of the process environment.

Art Unit: 1763

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide for the in-situ observation of the semiconductor fabrication process as taught by Bond.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9630.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763



Sylvia R. MacArthur  
June 28, 2004